

This listing of claims will replace all prior versions, and listings, of claims in the application:

In the Claims:

1 – 20 (Canceled)

(21) (NEW) A device for detecting environmental change of an automobile windshield, comprising:

a plane capacitor including two electrodes disposed on a common plane on an inner surface of said windshield, the electrodes having a total area of less than 100 cm², environmental change of said windshield effecting a change in capacitance of the plane capacitor; and

a sensor circuit operatively coupled with the plane capacitor and adapted to couple test signals to the plane capacitor and receive said test signals therefrom modified in relation to said change in capacitance so as to develop change signals corresponding to environmental change of said windshield, such that equipment working on said windshield in response to the change signals operates in closed-loop fashion to affect said environmental change of said windshield.

(22) (NEW) The device of claim 21, said sensor circuit including a signal generator adapted to generate said test signals, a programme-controlled analog signal magnifier and filter circuit adapted to receive the test signals as modified and output DC voltage signals in relation thereto, an analog-to-digital conversion circuit to convert the DC voltage signals to digital signals, and a micro-processor adapted to digitally process the digital signals and output change signals for control of said equipment.

(23) (NEW) The device of claim 1, the electrodes having a shape selected from the group consisting of rectangle, fan-shaped, triangle, polygon, fold line, screw line and parallel line.

(24) (NEW) The device of claim 1, the plane capacitor including two staggered pectinate electrodes.

(25) (NEW) The device of claim 24, the two electrodes being spaced apart a distance less than a thickness of said windshield thereat.

(26) (NEW) The device of claim 24, the line width of the two electrodes being less than 0.3 mm.

(27) (NEW) The device of claim 1, the plane capacitor including parallel wires according to a spacing in curve shape.

(28) (NEW) The device of claim 1, the electrodes being of conductive materials selected from the group consisting of copper, aluminium, silver, conductive rubber chip, conductive plastic, transparent conductive film and conductive rubber.

(29) (NEW) The device of claim 1 wherein each of the electrodes includes a plurality of electrically coupled electrode elements.

(30) (NEW) The device of claim 29 further comprising, for each electrode, leads electrically coupling the electrode elements thereof.

(31) (NEW) The device of claim 1, the plane capacitor being disposed on said windshield inner surface by bonding, compression jointing or spray.

(32) (NEW) The device of claim 1, the sensor circuit adapted to output test signals selected from the group of sine wave, square wave and triangle wave.

(33) (NEW) The device of claim 1, the total area of the electrodes being between 10 to 20 cm².

(34) (NEW) The device of claim 1, the two electrodes being spaced apart a distance equal to a thickness of said windshield thereat.

(35) (NEW) A method for detecting environmental change of an automobile windshield wherein a plane capacitor including two electrodes disposed on a common plane are on an inner surface of the windshield, the electrodes having a total area of less than 100 cm², environmental change of said windshield effecting a change in capacitance of the plane capacitor, the method comprising the steps of:

(a) coupling test signals to the plane capacitor;

(b) receiving test signals from the plane capacitor modified in relation to said change in capacitance;

- (c) developing change signals corresponding to environmental change of the windshield;
- (d) transmitting the change signals to equipment working on the windshield whereby to affect said environmental change of the windshield; and
- (e) repeating steps (a) through (d) whereby to operate in closed-loop fashion.

(36) (NEW) The method of claim 35 further comprising detecting and setting static initial values according to characteristics of the automobile windshield, characteristics of the plane capacitor, environmental temperature and humidity conditions.

(37) (NEW) The method of claim 35 wherein generating test signals includes generating test signals selected from the group consisting of sine wave, square wave and triangle wave.

(38) (NEW) The method of claim 35 wherein the frequency of the test signal is between about 100 kHz and about 1000 kHz.

(39) (NEW) The method of claim 35, the plane capacitor having a static capacitance between about 0.2 and about 5pf.

(40) (NEW) The method of claim 35 wherein: the equipment is selected from the group consisting of a rain wiper device, a demisting device and a combination thereof.